

Lab Concepts: Diffusion, Osmosis, Concentration, Molecular Size, Dialysis Tubing

The Effect of _____ on the Movement of Iodine, Water, Glucose and Starch across Dialysis Tubing

Observations for the experiment rationale

- Diffusion is the movement of particles from a _____ concentration to a _____ concentration.
- Osmosis is the movement of _____ across a semi-permeable membrane from a _____ concentration to a _____ concentration.
- Dialysis tubing is selectively permeable, which means that it
- Iodine(KI), water(H₂O), glucose and starch are different sized molecules
- Starch is a polymer consisting of many _____ molecules.
- Water and KI are _____ molecules compared to Starch and Glucose.
- Iodine acts an indicator for starch by changing color.(test it)
- Glucose can be identified by test strips.(test it)

Question: How does concentration and size affect the movement of Iodine, Water, Glucose and Starch across Dialysis tubing?

Purpose: To determine the permeability and direction of movement of molecules across a semi-permeable membrane.

Use the information above to answer the following questions:

Which two molecules are larger?

Which molecules do you think will cross the dialysis tubing?

Hypothesis: _____ and _____ will cross the membrane moving from a _____

concentration to a _____ concentration because these molecules are small enough to slip through the dialysis tubing.

Experimental Design:

Use the two solutions:

Solution 1: Iodine and water

Solution 2: starch(25%) and glucose(10%)

Put one solution in the bag (as demonstrated) and one solution in the beaker (you decide which goes where)

Draw and label a diagram to illustrate the experimental design and the direction of movement which will support your hypothesis.



Lab Concepts: Diffusion, Osmosis, Concentration, Molecular Size, Dialysis Tubing

Data:

Title and complete the data table:

	Solutions	Initial appearance/tests	Final appearance/tests
Beaker			
Bag			

Analysis:

What does the direction of movement indicate about the concentration differences in the bag and beaker?

Conclusion/Discussion

Complete a bulleted outline for your rough draft which includes the following information:

Bullet the following information:

- Purpose/hypothesis
- Concepts which explain the hypothesis
- Results which do or don't support the hypothesis
- Discussion of the significance of the results to the concepts behind the hypothesis
- Discussion of technique validity(what went wrong/could be improved)
- Discussion of results validity(what went wrong/could be improved)
- Description of other questions that this technique could be used to investigate